

Patent Claims

1. An organic light emitting diode (OLED) with at least one organic layer which has refractive index
5 inhomogeneities,
characterized in that
one and the same organic layer has at least one first partial region and at least one second partial region which comprise organic material and have different
10 refractive indices, and the partial regions form a layer with a composite-like structure.
2. The OLED as claimed in claim 1,
characterized in that
15 the different partial regions are formed by separation of the applied layer material.
3. The OLED as claimed in either of claims 1 and 2,
characterized in that
20 the organic layer has charge carrier transport material and/or emitter material.
4. The OLED as claimed in one of claims 1 to 3,
characterized in that
25 the organic layer has electrically inactive material.
5. The OLED as claimed in one of claims 1 to 4,
characterized in that
the layer has at least two polymers with different
30 refractive indices.
6. The OLED as claimed in claim 1,
characterized in that
the different partial regions are produced in a layer
35 made from a single type of a plastics material by means of local variation of a chemical and/or physical property.

7. The OLED as claimed in claim 6,
characterized in that
crystalline regions exist within an amorphous layer
matrix material.

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8. The OLED as claimed in claim 6,
characterized in that
the locally varying property is at least one of the
properties degree of crosslinking, degree of branching
10 density and copolymerization.

9. A method for producing an organic light emitting
diode (OLED) with at least one organic layer which has
refractive index inhomogeneities
15 characterized in that
the material of the organic layer is applied to a
carrier in such a way that, during or after the coating
step, at least one first partial region and at least
one second partial region form in the layer, said
20 partial regions having different refractive indices,
and the partial regions form a layer with a composite-
like structure.

10. The method as claimed in claim 9,
25 characterized in that
the partial regions are formed by a separation process
in the forming polymer layer from a mixture of soluble
or dispersible polymers or monomers, in which at least
two phases are produced.

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11. The method as claimed in either of claims 9 and
10,
characterized in that
charge carrier transport material and/or emitter
35 material is used for the organic layer.

12. The method as claimed in one of claims 9 to 11,
characterized in that

electrically inactive material is used for the organic layer.

13. The method as claimed in claim 10 or as claimed in
5 one of the claims referred back to claim 10,
characterized in that
the separation of the polymers is brought about by the
removal of a solvent or a dispersant.

10 14. The method as claimed in claim 10 or as claimed in
one of the claims referred back to claim 10,
characterized in that
the separation of the polymers is caused by a
separation of at least two solvents in which the at
15 least two polymers are dissolved.

15. The method as claimed in claim 10 or as claimed in
one of the claims referred back to claim 10,
characterized in that
20 the separation of the polymers is caused by a
separation of at least two dispersants in which the at
least two polymers are dispersed.

16. The method as claimed in claim 10 or as claimed in
25 one of the claims referred back to claim 10,
characterized in that
the at least two different polymers are formed in the
organic layer only during the coating method or
thereafter by polymerization.